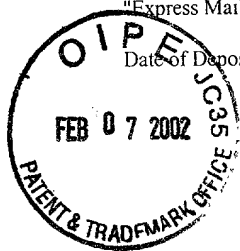


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Date of Deposit: February 7, 2002



**Patent**  
**Case No.: 10200/16**

Client Ref.: PM 99002

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN THE APPLICATION OF:

Tinghao Frank Wang

Appl. No.: To be assigned

Filed: February 7, 2002

For: METHOD FOR SELECTIVELY  
ETCHING SILICON AND/OR METAL  
SILICIDES

Group Art Unit: 1765

Examiner: D. Deo

Assistant Commissioner of Patents  
Washington, D.C. 20231

**PRELIMINARY AMENDMENT**

In accord with 37 C.F.R. § 1.78(a)(2), the above application claims the benefit of an earlier filing date. This claim is being made within the four-month statutory limit of the above application's filing date.

In accordance with 37 C.F.R. § 1.121, a clean copy of the amended specification paragraph effecting this priority claim, new claims, and amended claims is reproduced below. An Appendix is attached to show the changes made to the specification and claims by current amendment.

10071809-2007002

**In the Specification:**

Please insert the following Section before "Field of the Invention" in the enclosed specification:

**REFERENCE TO RELATED APPLICATIONS**

This application is a continuation of U.S. Nonprovisional Application No. 09/342,335, filed June 6, 1999, entitled "Method for Selectively Etching Silicon and/or Metal Silicides."

**In the Claims:**

Please cancel claims 13 and 16-20 and amend the claims as follows:

12. (Amended) A method comprising etching a metal silicide layer during fabrication of an integrated circuit in an environment having a concentration of O<sub>2</sub> greater than 25 % by volume so as to selectively etch the metal silicide layer with respect to an underlying poly-silicon layer.

Please add claims 21-27 as follows:

21. A method of etching a metal silicide, comprising etching of the metal silicide with a plasma,

wherein the plasma is prepared from a gas mixture comprising: chlorine, and greater than 25 % by volume oxygen.

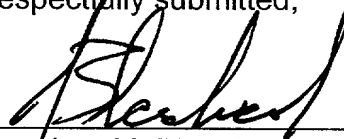
22. The method of claim 21, further comprising, prior to said etching, a breakthrough etch.

23. The method of claim 22, wherein said breakthrough etch comprises etching with a plasma prepared from a gas comprising CF<sub>4</sub>.

24. The method of claim 21, wherein said etching is a metal silicide etch that is selective to poly-silicon with a ratio of etch rates of at least 30.

25. The method of claim 1, further comprising, prior to said etching, a breakthrough etch.
26. The method of claim 1, wherein said etching is a metal silicide etch that is selective to poly-silicon with a ratio of etch rates of at least 30.
27. The method of claim 21, wherein said gas mixture comprises: chlorine and from 25 % to 30% by volume oxygen.

Respectfully submitted,



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**Appendix**

Please insert the following Section before "Field of the Invention" in the enclosed specification:

**REFERENCE TO RELATED APPLICATIONS**

This application is a continuation of U.S. Nonprovisional Application No. 09/342,335, filed June 6, 1999, entitled "Method for Selectively Etching Silicon and/or Metal Silicides."

Please amend the claims as follows:

12. (Amended) A method comprising etching a metal silicide layer during fabrication of an integrated circuit in an environment having a [high] concentration of O<sub>2</sub> greater than 25 % by volume so as to [fully] selectively etch the metal silicide layer with[out etching] respect to an underlying poly-silicon layer.

Please cancel claims 13 and 16-20.

Please add claims 21-27 as follows:

- 21. A method of etching a metal silicide, comprising etching of the metal silicide with a plasma,  
wherein the plasma is prepared from a gas mixture comprising: chlorine, and greater than 25 % by volume oxygen.--
- 22. The method of claim 21, further comprising, prior to said etching, a breakthrough etch.--
- 23. The method of claim 22, wherein said breakthrough etch comprises etching with a plasma prepared from a gas comprising CF<sub>4</sub>.--
- 24. The method of claim 21, wherein said etching is a metal silicide etch that is selective to

poly-silicon with a ratio of etch rates of at least 30.--

--25. The method of claim 1, further comprising, prior to said etching, a breakthrough etch.--

--26. The method of claim 1, wherein said etching is a metal silicide etch that is selective to poly-silicon with a ratio of etch rates of at least 30.--

--27. The method of claim 21, wherein said gas mixture comprises: chlorine and from 25 % to 30% by volume oxygen.--